

January 19, 2017

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Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: In re Connect America Fund, WC Docket 10-90

Dear Ms. Dortch:

The Association of Missouri Electric Cooperatives, Midwest Energy Cooperative, HomeWorks Tri-County Electric Cooperative, Alger Delta Cooperative Electric Association, Great Lakes Energy, the National Rural Electric Cooperative Association (“NRECA”),¹ the Utilities Technology Council (“UTC”),² and NTCA–The Rural Broadband Association³

¹ NRECA is the national service organization for America’s Electric Cooperatives. The nation’s member-owned, not-for-profit electric co-ops constitute a unique sector of the electric utility industry—and face a unique set of challenges. NRECA represents the interests of the nation’s more than 900 rural electric utilities responsible for keeping the lights on for more than 42 million people across 47 states. Electric cooperatives are driven by their purpose to power communities and empower their members to improve their quality of life. Affordable electricity is the lifeblood of the American economy, and for 75 years electric co-ops have been proud to keep the lights on. Because of their critical role in providing affordable, reliable, and universally accessible electric service, electric cooperatives are vital to the economic health of the communities they serve. America’s Electric Cooperatives bring power to 75 percent of the nation’s landscape and 12 percent of the nation’s electric customers, while accounting for approximately 11 percent of all electric energy sold in the United States. NRECA’s member cooperatives include 65 generation and transmission (“G&T”) cooperatives and 840 distribution cooperatives. The G&Ts are owned by the distribution cooperatives they serve.

² Created in 1948, UTC is the global trade association for the telecommunications and information technology interests of electric, gas and water utilities and other critical infrastructure industries (“CII”), such as pipeline companies. Its members include large investor-owned utilities that serve millions of customers, often across multi-state service territories; and its members include smaller cooperative or municipal utilities that may serve only a few thousand customers in rural areas or isolated communities. All of these members own, manage or control extensive private internal communications networks that they use to support the safe, reliable and efficient delivery of essential services to the public at large. These communications networks are used both for voice and data communications for routine dispatch, as well as emergency response during service restoration in the aftermath of hurricanes, storms and other natural disasters, which can affect large areas for extended periods.

³ NTCA represents more than 800 independent, community-based telecommunications companies and cooperatives and more than 400 other firms that support or are themselves engaged in the provision of communications services in the most rural portions of America. All of NTCA’s service provider members are full service local exchange

(collectively the “Rural Coalition”) submit this proposal for the Connect America Fund Phase II auction. Collectively, the undersigned operate critical infrastructure serving over 42 million consumers in rural America. The proposal would achieve the Commission’s goals and statutory directive to ensure that service in rural and high cost areas is reasonably comparable to service in urban areas.

In 2011, the Commission outlined a framework to bring broadband to unserved areas, with the goal of “ensur[ing] that robust, affordable voice and broadband service” is “available to Americans throughout the nation.”⁴ Although the Commission has made strides toward achieving this goal by completing the state-wide election for price-cap carriers Phase II Connect America Funds,⁵ many communities, particularly in areas where the price-cap carriers declined support, continue to wait for this promise to be delivered. It is time for the Commission to complete its reform effort by adopting the final parameters of the Phase II auction to ensure that “robust” and “affordable” broadband is available throughout our nation and that, true to our commitment to universal service, no areas are left behind.

Weighting

In May 2016, the Commission adopted the following tiers for bidding in the Phase II auction:⁶

Performance Tier	Usage Allowance
10/1 Mbps	≥150 GB
25/3 Mbps	≥150 GB or U.S. median, which is higher
100/20 Mbps	Unlimited
1 Gbps/500 Mbps	Unlimited
High latency (regardless of speed)	-

The Commission sought comment on how to weigh the relative tiers in an accompanying Further Notice of Proposed Rulemaking. To have a successful, competitive auction, the weighting should encourage all technologies to participate, while recognizing actual usage trends

carriers and broadband providers, and many provide fixed and mobile wireless, video, satellite and other competitive services in rural areas as well.

⁴ *In re Connect America Fund*, Report and Order, 26 FCC Rcd 17,663, 17,667 ¶ 1 (2011).

⁵ In 2015, price-cap carriers accepted more than \$1.5 billion in annual Phase II support in exchange for a state-level commitment to deploy and maintain voice and broadband service in high cost areas in their respective states. *See* Press Release, FCC, Carriers Accept Over \$1.5 Billion in Annual Support from Connect America Fund to Expand and Support Broadband for Nearly 7.3 Million Rural Consumers in 45 States and One Territory (Aug. 27, 2015), https://apps.fcc.gov/edocs_public/attachmatch/DOC-335082A1.pdf.

⁶ *In re Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 5949, 5957 ¶ 15 (2016).

among consumers and their needs over the entire life of the supported network. In a good-faith effort to build consensus,⁷ the Rural Coalition submits the below weighting proposal that, combined with sufficient protections to guard against waste, fraud and abuse outlined below, meets these goals.

Performance Tier	Weighting %
10/1 Mbps	+10
25/3 Mbps	0
100/20 Mbps	-15
1Gbps/500 Mbps	-45 for a total of -60
High latency (regardless of speed)	+25

The weighting in the proposal would be additive, and calculated as a percentage with reference to the reserve price. For example, in an area with a \$100 reserve price:

- a \$100 bid of 1 Gbps would be \$40 after weighting (-15% of reserve (\$15) for 100 Mbps and -45% of reserve (\$45) for 1 Gbps);
- a \$65 bid for 100 Mbps would be \$50 after weighting (-15% of reserve (\$15) for 100 Mbps);
- a bid of 10 Mbps with higher latency for \$5 would be \$40 after weighting (+10% of reserve (\$10) for 10 Mbps and +25% of reserve (\$25) for latency); and
- a bid of 10 Mbps for \$25 would be \$35 after weighting (+10% of reserve (\$10) for 10 Mbps).

By contrast, in an area with a \$75 reserve price:

⁷ Some members of the Rural Coalition have previously submitted their own weighting proposals and are supporting this consensus framework in an effort to achieve the Commission's goal of a neutral framework that allows all providers, regardless of technology, the opportunity to participate. *See* Joint Comments of the National Rural Electric Cooperative Association & the Utilities Technology Council, *In re Connect America Fund*, WC Docket Nos. 10-90 et al., at 7 (July 21, 2016); Reply Comments of NTCA-The Rural Broadband Association, *In re Connect America Fund*, WC Docket Nos. 10-90 et al., at 7-8 (Aug. 5, 2016). While the Rural Coalition would prefer the weighting of 1 Gbps to be 90-95 percent as a "discount" against the reserve price to reflect the true benefits and value that such connectivity brings to an entire community, the proposal herein (which contains only a 60 percent discount against the reserve price and a *total* "spread" of 95 percent) is a good faith effort to bring consensus and reflect a more neutral framework to expedite resolution of this proceeding. If the Commission deviates from the Rural Coalition's proposal, we reserve the right to adjust the proposal or otherwise advocate for a stronger preference for greater speeds and lower latency of the kind that consumers and communities will clearly come to expect over the lives of these networks constructed using USF resources.

- a \$75 bid of 1 Gbps would be \$30 after weighting (-15% of reserve (\$11.25) for 100 Mbps and -45% of reserve (\$33.75) for 1 Gbps);
- a \$65 bid for 100 Mbps would be \$53.75 after weighting (-15% of reserve (\$11.25) for 100 Mbps);
- a \$5 bid for 10 Mbps with higher latency would be \$31.25 after weighting (+10% of reserve (\$7.50) for 10 Mbps and +25% of reserve (\$18.75) for latency); and
- a \$25 bid for 10 Mbps would be \$32.50 after weighting (+10% of reserve (\$7.50) for 10 Mbps).

The goal is to give each technology a chance to compete while recognizing the trends in consumer usage toward higher speeds.

Such weighting is logical given that consumers are increasingly demanding and using higher speeds and much greater levels of capacity on a daily and monthly basis, as well as more latency-sensitive services and applications. Indeed, the most recent Measuring Broadband America Report found that “[t]he median download speed, averaged across all participating ISPs, has almost quadrupled . . . from approximately 10 Mbps in March 2011, to approximately 41 Mbps in September 2015. Compared to last year’s unweighted median speed of 32 Mbps, this year’s speed was an increase of approximately 28%.”⁸ As Chart A below shows, if this trend continues, median download speeds throughout the nation—without even taking into account urban-rural deployment gaps—will exceed 1 Gbps in 8 years.⁹

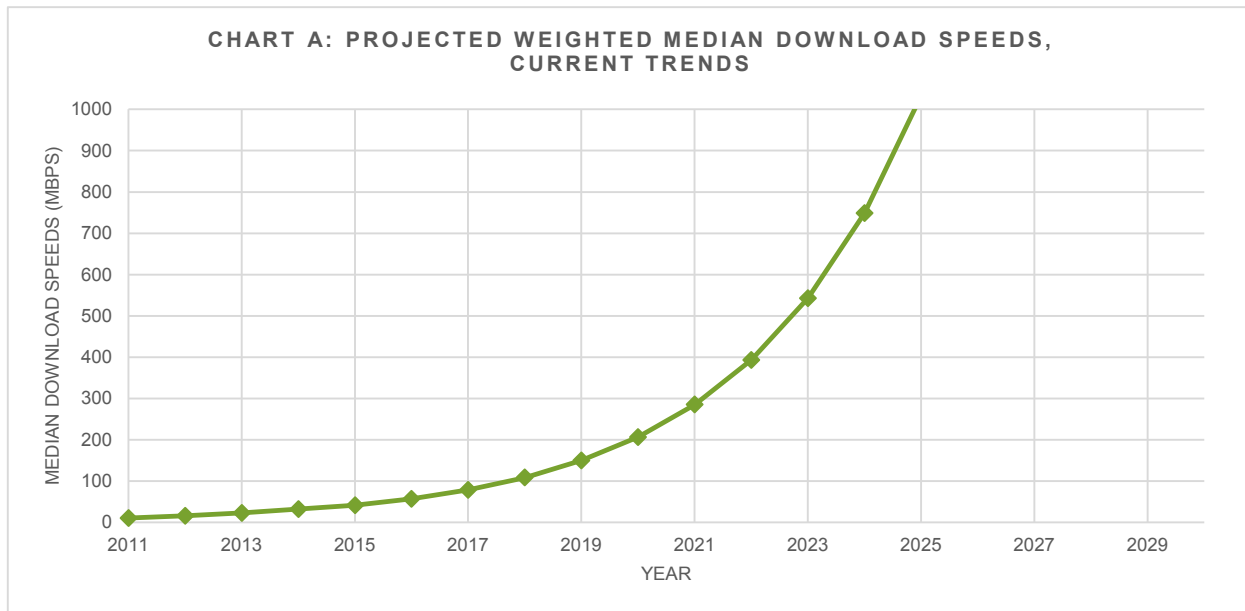
Latency and capacity likewise remain important aspects of broadband user experience. Market reports indicate that more than 75 percent of aggregate fixed broadband data usage in North America is associated with applications that are latency-sensitive and/or consume substantial amounts of capacity such as streaming video, interactive video, marketplace activity, or other communications.¹⁰ Particularly as consumers—and especially business customers—

⁸ FCC, Measuring Broadband America Fixed Broadband Report 15 (2016), <http://data.fcc.gov/download/measuring-broadband-america/2016/2016-Fixed-Measuring-Broadband-America-Report.pdf>.

⁹ Chart A relies on data from the FCC’s 2016 “Measuring Broadband America” report. The projections for 2016-2030 rely on the assumption that median download speeds will continue to increase at the compound annual growth rate (“CAGR”) of the 2012-2015 period (38.004%). Figures for 2012-2015 represent September measurements. The figure for 2011 represents a March measurement.

¹⁰ Sandvine, Global Internet Phenomena 3 (2015), <https://www.sandvine.com/downloads/general/global-internet-phenomena/2015/global-internet-phenomena-report-latin-america-and-north-america.pdf>; *see also In re Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant To Section 706 of the Telecommunications Act of 1996, As Amended By the Broadband Data Improvement Act*, 2016 Broadband Progress Report, 31 FCC Rcd 699, 725 ¶ 62 (2016) (explaining that latency is important for a variety of applications, including Voice over Internet

increasingly look to shed traditional telephone lines for VoIP connections or other alternative voice technologies, the latency associated with the underlying connection can be mission-critical in ensuring reliable, quality communications of the kind that policymakers have indicated is so important.¹¹



The substantial investment and deployment of Gigabit service and other higher-speed deployments by private operators around the country suggest that the broadband providers

Protocol (“VoIP”), video calling, distance learning, and online gaming, which may be effectively unusable over high latency connections, regardless of the download/upload speeds being offered).

¹¹ See, e.g., Improving Rural Call Quality and Reliability Act of 2016, S. 827, 114th Cong. (2016) (directing the Commission to establish basic quality standards for providers that transmit voice calls); Improving Rural Call Quality and Reliability Act of 2016, H.R. 2566, 114th Cong. (2016) (same); *In re Developing a Unified Inter-carrier Compensation Regime*, Declaratory Ruling, 27 FCC Rcd 1351, 1352 ¶ 2 (2012) (observing that poor call quality and reliability “can have dire consequences” for small businesses, schools, public safety officials, and families); *In re Rural Call Completion*, Order on Reconsideration, 29 FCC Rcd 14,026, 14,059 (2014) (statement of Comm’r Clyburn) (“It is astonishing that in 2014 an alarming number of calls to rural America are not being completed. This is unacceptable. The core of the FCC’s mission is to guarantee that networks are reliable and resilient so that every consumer can make and receive a telephone call.”); *id.* at 14,061 (statement of Comm’r Pai) (“When you dial a phone number, you expect your call to go through. . . . And as Senators Michael B. Enzi, John Thune, Pat Roberts, James M. Inhofe, Jerry Moran, John Boozman, John Barrasso, John Hoeven, Orrin G. Hatch, and Deb Fischer reminded us just a few weeks ago, ‘[r]ural businesses are particularly impacted when calls are not completed because they risk losing valuable business.’”); *id.* at 14,062 (statement of Comm’r O’Rielly) (“Americans expect their calls to be completed no matter where they live.”).

anticipate that median download speeds are likely to increase significantly and thus that the current growth from the Measuring Broadband America Report is likely to continue. Wireline Gigabit service is or will soon be available in over 75 percent of the 150 most populous cities in the United States. The list of cities with 1 Gigabit service (or higher)¹² is likely to grow, as an increasing number of providers improve service to meet a growing consumer demand. Indeed, Verizon, recently announced a 750 Mbps offering in its Verizon FiOS areas, which include seven million homes and businesses.¹³

Access to increasingly higher broadband speeds strongly suggests that subscriptions and median download speeds in America are likely to continue to increase. Even assuming that the current growth trend of median download speeds were to decelerate, speeds will continue to grow rapidly. For example, even a conservative assumption that assumes growth will slow year-over-year,¹⁴ the median download speeds would still reach nearly 400 Mbps in 2027 and would exceed 500 Mbps by 2030. These numbers do not distinguish between rural and urban areas. Given the persistence of an urban-rural availability gap,¹⁵ the median download speeds in urban areas, which is the measure for reasonably comparable service, will be even faster.

The weighting the Rural Coalition proposes recognizes the continued increase in speed and is critical to the goal of encouraging providers to deliver robust service to our rural communities. Failing to do so would not only be inconsistent with the statute, but would also thwart the Commission's stated goal of not leaving rural areas behind.¹⁶

Moreover, the Commission has a duty to structure its auction to reflect not only actual usage today, but also how such usage will evolve over the ten-year duration of the auction support. The Federal Universal Service Fund ("USF") is a finite resource derived from contributions ultimately borne by American consumers; the Commission must ensure the most efficient and effective use of USF. In this case, the Commission must evaluate not only what broadband features may be sufficient for consumers in urban and rural areas today, but also over

¹² Charter Communication's CEO recently predicted that his firm will be able to offer 10 Gigabit service throughout its network in the future. See Mike Farrell, *Charter Eyes 10-Gbps Broadband*, Multichannel News (Dec. 6, 2016), <http://www.multichannel.com/news/cable-operators/charter-eyes-10gbps-broadband/409489>.

¹³ Jon Brodtkin, *Verizon Boosts Top FiOS Speeds to 750Mbps, Has Multi-Gigabit in Works*, ArsTechnica (Jan. 11, 2017), <http://arstechnica.com/information-technology/2017/01/verizon-boosts-top-fios-speeds-to-750mbps-has-multi-gigabit-in-works/>.

¹⁴ The analysis begins with the actual 2014-2015 growth rate of 28% and assumes such growth declines at an annual rate of -5.495%, which was the average rate of change in the annual percent increase of median broadband speeds during the 2012-2015 period from the FCC's 2016 "Measuring Broadband America" Report.

¹⁵ See, e.g., *Inquiry Concerning the Deployment of Advanced Telecommunications Capability*, 31 FCC Rcd at 731-58 ¶¶ 77-139.

¹⁶ See, e.g., *Connect America Fund*, 31 FCC Rcd at 5957 ¶ 16 ("We want to ensure that rural America is not left behind, and the consumers in those areas benefit from innovation and advances in technology.").

the full life of the supported assets. Broadband networks are long-term infrastructure, just as bridges and roads, and the focus should similarly be to plan for a long-term planning horizon.¹⁷ It is a far more efficient use of USF to encourage deployment of infrastructure that is flexible to evolve and meet the demands of consumers today and over the next ten years, than investing in a “patch job” of facilities that will need to be rebuilt with additional USF in the future.

It would also be far more efficient to leverage Connect America Fund (“CAF”) funding to serve *entire communities*—including schools, libraries, and medical facilities, which require higher-capacity connections—rather than having multiple universal service programs enable potentially duplicative network investments in one area. Thus, an auction and CAF program that places the proper weight on, and ultimately delivers, higher speeds *for the entire community* (including residential users, businesses, and anchor institutions) can provide substantial “bang for the buck” in a much more efficient and effective manner. Indeed, the Commission acknowledged as much in recognizing the “benefits to achieving our other universal service objective if [a] Phase II service provider will be able to provide broadband adequate to meet the needs of the entire community, including schools, libraries, and rural health care providers, potentially reducing the overall cost of the USF to consumers.”¹⁸

Accountability in and Validation of Potential Use of USF Resources

In conjunction with the weighting the Rural Coalition proposes, it is critical that the Commission adopt strict measures to prevent any provider from getting the benefit of a weighting credit and bidding in tiers that they cannot truly deliver. If that were to occur, bidders would ultimately fail to perform, resulting not only in waste, fraud and abuse but also leaving rural communities without access to broadband. The Rural Broadband Experiments (“RBE”) show that safeguards are necessary to protect the integrity of the fund, and it is incumbent upon the Commission to build upon lessons learned from the RBEs.

Under the Rural Coalition’s proposal, any technology is eligible to bid in the 10/1 Mbps and 25/3 Mbps tiers provided that the bidder meets the Commission’s eligibility requirements and submits the required information on the short form. Consistent with the Commission’s May 2016 Connect America Fund Order, applicants requesting the higher tiers must submit “information or documentation required to establish their eligibility for any bidding weights.”¹⁹ Accordingly, any entity that wants to bid in the 100 Mbps or 1 Gbps tiers must submit technical

¹⁷ In business circles, this concept has been termed “total cost of ownership”—that is, estimating the total costs of owning and operating (and needing to reinvest in) an asset over its economic life, rather than looking merely at the upfront initial costs of procuring the same asset.

¹⁸ *Connect America Fund*, 31 FCC Rcd at 5957 ¶ 16.

¹⁹ *Id.* at 5981 ¶ 98 (concluding that applicants in the auction “will also be required to submit with their short-form applications any information or documentation required to establish their eligibility for any bidding weights or preferences that the Commission ultimately adopts”).

information to demonstrate that its network can deliver the relevant speed. Although we expect parties to undertake such analysis to determine the costs to bid in a relevant area, any provider concerned about the potential burden of doing so need not apply to bid in the higher tiers.

Additionally, the entity must submit information showing it can deliver, per the specifications in the tiers adopted by the FCC, unlimited usage capacity to every household in the census block(s) where the entity is bidding. Because winning bidders will become the eligible telecommunications carriers, and price-cap incumbents will receive forbearance from obligations in these blocks,²⁰ the winning bidder has a duty to serve all households in the relevant geographic area. Engineering a network to meet less than 100 percent of households is insufficient, and entities that would do so should not be eligible to bid in the higher tiers. Indeed, an inability or failure to deliver on the promised networks to ***each and every location*** in the relevant census blocks risks creating what would effectively be small pockets of “remote areas” scattered among census blocks across rural America, exacerbating an already thorny problem of how to reach such areas, and all but eviscerating any rational business case to reach the remaining stranded locations.²¹

The Rural Coalition believes that the Commission should be guided by objective criteria to determine whether a particular bidder using wireless, wireline or satellite technology can meet the speed and capacity in the higher tiers.²² In particular, the Commission must ensure that operators will be able to deliver services to each location in the asserted areas on a reliable, continuous basis. The criteria for such review should look first to established, generally accepted engineering standards that include reasonable expectations as to – and take account of – localized conditions with respect to spectrum capacity, topographical and other geographic challenges, and oversubscription/overload assumptions..²³

²⁰ See *In re Connect America Fund*, Report and Order, 29 FCC Rcd 15,644, 15,663-71 ¶¶ 50-70 (2014).

²¹ While it is critical that all networks be engineered to reach 100 percent of locations, the Rural Coalition is not proposing to modify the rule that recipients can elect to deploy to 95 percent of the number of supported locations in a given state. See 47 C.F.R. § 54.310(c). The 95 percent election is intended to address unforeseen circumstances upon deployment; not to allow parties to engineer and design networks that will only serve part of an area. See *Connect America Fund*, 31 FCC Rcd at 5966 ¶ 46.

²² The Rural Coalition expects to file an engineering paper in the near future to help facilitate the Commission’s review.

²³ See, e.g., FCC, OBI Technical Paper No. 1, *The Broadband Availability Gap* at 90 (2010), <https://transition.fcc.gov/national-broadband-plan/broadband-availability-gap-paper.pdf> (“Busy hour offered load, or BHOL, is the average demand for network capacity across all subscribers on the network during the busiest hours of the network. Understanding BHOL is critical for dimensioning the network to reduce network congestion.”); Letter from Michael R. Romano, Senior Vice President, Policy, NTCA—The Rural Broadband Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 10-90, at 1 (filed Nov. 7, 2013) (noting the importance as stewards of universal service in taking “full account” of the capabilities of different technology platforms in providing “reasonably comparable” voice and broadband services in high cost areas); Letter from

Validation of such technical claims is once again important for the Commission to serve as an effective steward of finite USF resources—due diligence is essential to ensure that the bidder can indeed do what it purports to do in receiving hundreds of thousands or millions of dollars. Because the review is necessary to protect the integrity of the fund, the Universal Service Administrative Company (“USAC”) should be directed to hire an independent third party to review the short-form applications within 60 days given the scope and potential volume of the nationwide auction. The review is essential to prevent fraud in the program by ensuring that only truly qualified entities are eligible to bid and that only entities with the appropriate technical information receive the weighting credits.²⁴ It is consistent with USAC’s use of third parties to conduct audits of the program, but this technical review should occur upfront to ensure the technical “bona fides” of potentially winning bidders and to prevent ineligible entities from bidding and winning funding for networks that ultimately cannot achieve the promise claimed in applications.

Finally, the Commission should also adopt strict *ex post* remedies to further discourage potential abuse. In addition to forfeitures, the Commission should consider barring bidders that abuse the process by making materially false claims as to their technical capability to deliver in a given tier from participating in future Connect America Fund auctions. Doing so is consistent with Commission precedent for bidders that violate the anti-collusion rule.²⁵

Michael R. Romano, Senior Vice President, Policy, NTCA—The Rural Broadband Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 10-90, at 1 (filed Mar. 10, 2015) (emphasizing that it is “essential to take accurate stock of the capabilities and limitations of various technologies in devising scalable broadband network solutions”); Letter from Stephen L. Goodman, Counsel for ADTRAN, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 10-90 (filed Oct. 30, 2015).

²⁴ Using a third party to review the applications is also consistent with the approach used in the New York auction.

²⁵ See 47 C.F.R. § 1.2109(d) (“Bidders who are found to have violated the antitrust laws or the Commission’s rules in connection with their participation in the competitive bidding process may be subject, in addition to any other applicable sanctions, to forfeiture of their upfront payment, down payment or full bid amount, and may be prohibited from participating in future auctions.”)

The Rural Coalition therefore respectfully requests that the Commission adopt our consensus weighting proposal as soon as possible so rural communities, who have been waiting so long for service, can finally receive the benefits unleashed by broadband.

Respectfully submitted,

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